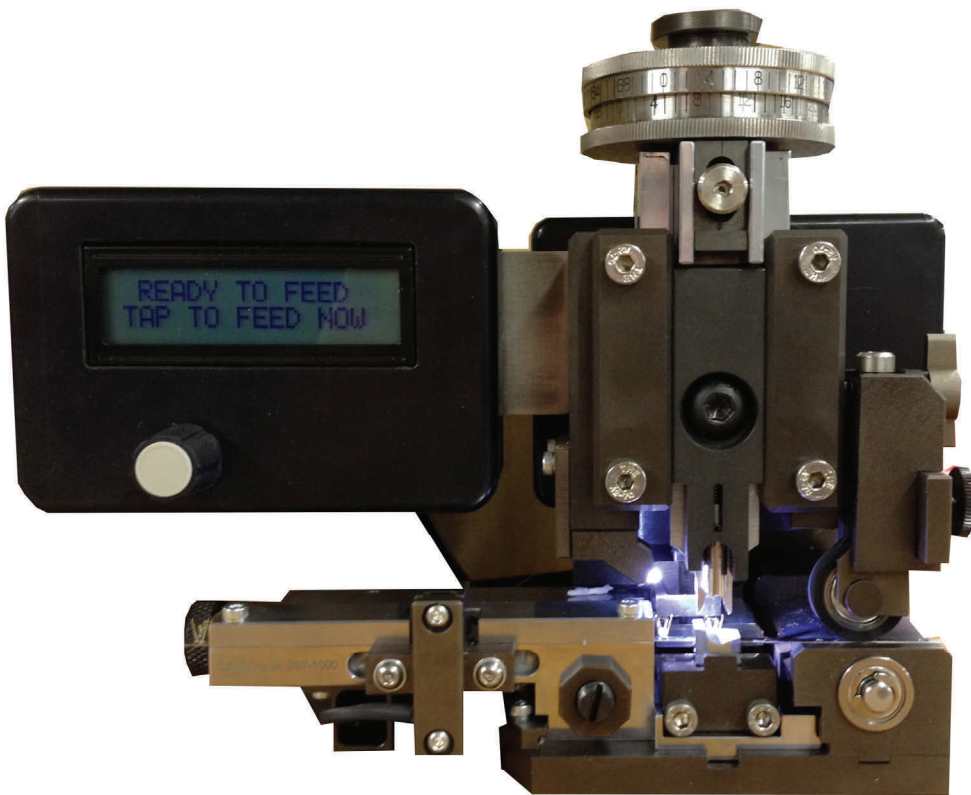


# Accu-Drive Applicator User Manual

Rev. 1



# **Accu-Drive**

## **User Manual**

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# **Accu-Drive**

## **User Manual**

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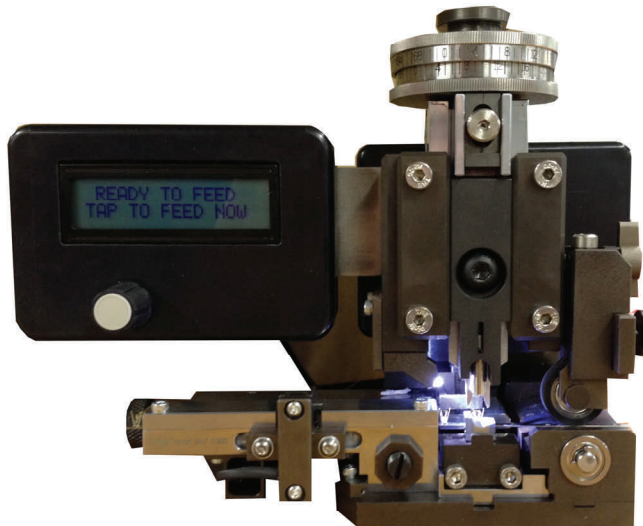
# Accu-Drive Applicator

## User Manual

### Section 1 Introduction

Accu-Drive is a left-to-right side feed applicator which installs in industry standard presses. Those tooling elements that are unique to the terminal (packaged as an upper tooling module and a lower tooling module) are designed and manufactured to be removed/installed easily and quickly. Tooling for one terminal can easily be swapped with another. The swappable tooling for a given terminal is referred to as a “Crimp Pack”. As a result, one Accu-Drive applicator can be used to crimp a large variety of terminals- simply through the purchase of additional crimp packs. Significant reductions in tooling costs can be achieved because a complete applicator does not have to be purchased for each terminal.

Unlike traditional applicators which use mechanical designs to feed terminals pre-termination, Accu-Drive uses a patented feeding method that electronically performs feeding operations downstream from crimping operations, that is, feeding occurs post termination. Accu-Drive employs pinch rollers which engage the intact carrier strip *after* the terminal has been crimped to the wire and removed from the carrier strip. The pinch rollers are driven by a stepper motor. Microprocessor based electronics, in conjunction with sensors, initiates a feeding cycle on the upward motion of the ram and controls the stepper motor to precisely position the next terminal to be crimped. A control module allows the operator to set feeding parameters electronically. As a result of this superior terminal feeding system, crimp packs are readily accessible and easy to swap...set-up is quick and easy... and, compared to industry-standard applicators, it all comes at reduced costs and downtime!



## Section 2 Safety Precautions

Accu-Drive is designed to provide millions of wire crimps reliably and safely. Please read and follow all of the warnings and precautions listed below to avoid personal injury and equipment damage.

- NEVER** USE THE CRIMPTRONIX ACCU-DRIVE APPLICATOR IN A PRESS OR WIRE PROCESSING MACHINE WITHOUT GUARDS OR SAFETY DEVICES THAT ARE INTENDED TO PREVENT HANDS FROM REMAINING IN THE DIE SPACE. THIS APPLICATOR IS SUPPLIED WITH NO GUARDS AND IS INTENDED TO BE USED WITH THE GUARDS SUPPLIED BY THE PRESS AND/OR THE WIRE PROCESSING MANUFACTURER.
- NEVER** OPERATE, SERVICE, INSTALL, OR ADJUST THIS ACCU-DRIVE APPLICATOR WITHOUT PROPER INSTRUCTION AND WITHOUT FIRST READING AND UNDERSTANDING THE INSTRUCTIONS IN THIS MANUAL AND ALL APPLICABLE PRESS AND/OR WIRE PROCESSING MACHINE MANUALS.
- NEVER** INSTALL OR SERVICE THIS ACCU-DRIVE APPLICATOR WHILE CONNECTED TO ANY ELECTRICAL POWER SOURCE. DISCONNECT POWER BY UNPLUGGING ACCU-DRIVE FROM ITS POWER SOURCE.
- CAUTION** CRIMPTRONIX ACCU-DRIVE APPLICATORS ARE DESIGNED TO OPERATE IN PRESSES WITH STANDARD SHUT HEIGHTS OF 135.80MM (5.346"). INSTALLATION IN CRIMP PRESSES WITH OTHER THAN STANDARD SHUT HEIGHTS CAN CAUSE SEVERE TOOL BREAKAGE. IT IS RECOMMENDED THAT SHUT HEIGHT BE VERIFIED BEFORE INSTALLING ACCU-DRIVE IN A PRESS.
- CRIMPTRONIX WILL NOT BE LIABLE FOR ANY DAMAGES AS A RESULT OF INSTALLATION IN A CRIMP PRESS WITH NONSTANDARD OR IMPROPERLY SET SHUT HEIGHT

- Do not attempt to alter, disassemble or adjust any part of this equipment that is not expressly described in this manual.
- Avoid using or storing Accu-Drive, crimp packs, power supplies, power cords or cables in the following places:
  - Places subject to temperatures above 104 degrees Fahrenheit or below 32 degrees Fahrenheit.
  - Places that are humid or wet.
  - Places that are excessively dusty.
- Do not cut, damage, alter or place items on the power cords.
- Use only specified AC power sources.

## Section 2 Safety Precautions— continued

- Ensure that the Accu-Drive power cords and any extension cords that may be used are routed to avoid interference with equipment and personnel. Keep power cords well away from damp or wet areas.
- Do not allow liquids or foreign objects to enter Accu-Drive.
- Do not use Accu-Drive in any press that does not have a compatible means to secure it to the press.
- Do the following before making any mechanical adjustments on Accu-Drive, removing or installing crimp packs, performing maintenance or making repairs:
  - Turn Accu-Drive off.
  - Disconnect power from Accu-Drive.
  - If Accu-Drive is in a press, turn-off or remove power from the press.
- When installing crimp packs, ensure that the identification number on the lower tooling matches the identification number on the upper tooling before crimping terminals.
- Accu-Drive dispenses the intact carrier strip after the crimping process is complete and terminals have been removed from the carrier strip. Make certain that the carrier strip is routed such that:
  - The strip cannot contact AC power cords.
  - The strip cannot contact AC power outlets.
  - The strip cannot enter equipment or tooling.
  - Operators avoid being cut by sharp edges that may be present on the edge of the strip.
  - During high volume production, the carrier strip is cut periodically to prevent excessive amounts of the carrier strip from accumulating.
- Use only specified lubricants.
- The pinch rollers used by Accu-Drive to feed terminals can operate anytime Accu-Drive is connected to AC power and turned-on. Accu-Drive does not have to be installed in a press to operate the rollers. Keep hands, fingers and clothing clear of the rollers at all times.
- Stop operating Accu-Drive and remove power from it immediately if it emits smoke, a strange smell or otherwise behaves abnormally.
- Unlike traditional applicators which use a mechanical linkage to the ram to feed terminals, the ram in Accu-Drive moves freely. As a result, the ram can easily fall out. When carrying or transporting Accu-Drive, remove the ram or take precautions to prevent it from falling out.

### Section 3 Features and Benefits

Accu-Drive's patented feeding system and quick-change crimp packs provide the following features and benefits:

- Crimp packs substantially reduce tooling costs.
- Accu-Drive works in industry standard presses and fully automatic wire processing equipment.
- Installing crimp packs to accommodate a different terminal can be done in less than one minute!
- Accu-Drive does not have to be removed from the press to install or remove crimp packs.
- Loading terminals is easy because the lower tooling has very little drag and there are no feed pawls to interfere with the loading process.
- All of Accu-Drive's features and capabilities are integrated into the product- no "data buttons" or data interfaces to other equipment is required.
- Terminals are precisely positioned over the anvil. In most cases, no positioning adjustments are required. If an operator chooses to modify terminal position, a position offset range of up to +/- .050" in .001" steps can be achieved electronically (via a control module).
- The speed at which terminals are fed is controlled electronically. The operator can select speeds from .5 inch/second to 5 inches/second in steps of 0.1 inch/second.
- A delay can be set electronically to provide a delay between the time a feed cycle is initiated (by the upward movement of the ram) and the time at which feeding actually begins. Delays provide time to allow a just-crimped wire to clear the anvil before the next feeding cycle begins. Delay times can be set from 0 seconds to 5 seconds in 0.1 second increments.
- Crimp force analysis available on selected automatic wire processing equipment is much more accurate and consistent because of the absence of a mechanical feeding mechanism.
- To optimize access to the control module, it has a magnetic backing which allows it to be docked at a location convenient to the operator. It can also be disconnected from the applicator. By disconnecting and stowing the control module in a secure location, a supervisor can prevent unauthorized operators from modifying feeding parameters.
- The crimping zone is brightly illuminated using an led. Illumination can be turned off if desired.
- Because of the superior feeding system, fewer mis-feeds occur. This substantially increases the life of the perishable tooling.

## Section 4 Overview of the Terminal Feeding Process

To get the most out of any product, it is always beneficial to have a basic understanding of how the product works. Accu-Drive executes the following sequence during each feeding cycle:

- The press moves the ram upward. This triggers a ram sensor to initiate a feeding cycle.
- If a delay has been set by the user, no action is taken until the specified delay expires.
- After the delay (if any), the stepper motor is actuated to begin feeding terminals. Feeding occurs at a speed selected by the operator. Feeding continues until the terminal sensor, which is an optical sensor located on the lower tooling, senses the presence of a terminal or a hole in the carrier strip. (If a terminal or hole is never sensed, the motor will dispense three inches of the carrier strip and stop).
- Immediately after the terminal sensor has sensed a terminal, the stepper motor continues to advance terminals a pre-determined distance. This distance is modified (increased or decreased) based upon a position offset specified by the operator.
- The feeding cycle ends. Accu-Drive awaits the upward motion of the ram to begin another feeding cycle.

The next section describes how the operator uses the control module to display and change information to control the feeding process, perform diagnostics and facilitate maintenance and production runs.



## Section 5 Control Module

A control module is provided with each Accu-Drive applicator. Unlike traditional mechanical applicators that rely exclusively on mechanical adjustments, you can use the control module to *electronically* configure many of the set-up parameters for a production run, initiate actions to simplify set-up and obtain information to facilitate troubleshooting and maintenance.

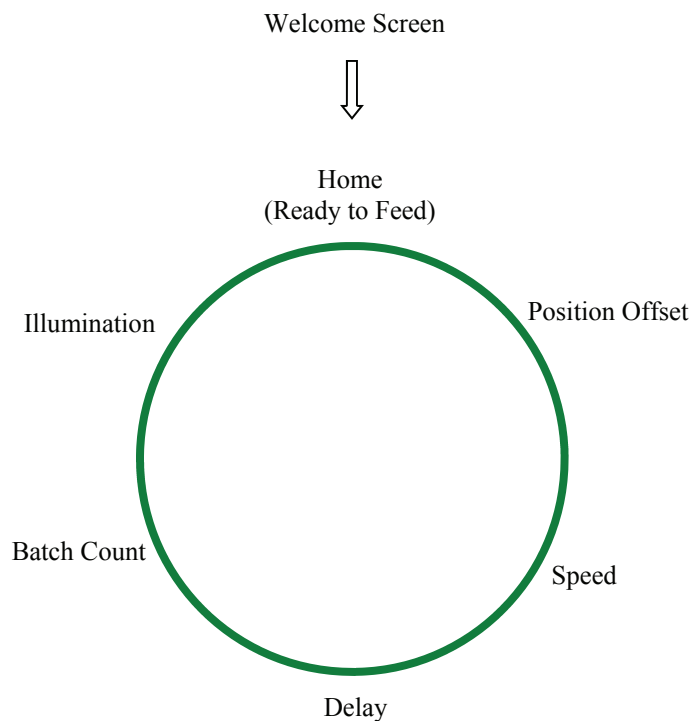
The control module contains one LCD display and one knob. The display has two rows of characters with 16 characters per row. Using the control module is easy. *Rotate* the knob to access menu selections (“screens”) and change data; *press* the knob to initiate actions and enter data. Just rotate and press– it’s that simple.



## Section 5 Control Module—continued

The user interface presents screens that are displayed in the LCD display and navigated using the knob. Navigating through the menu is very easy. The menu items can be thought of as forming a circle. A clockwise rotation of the knob moves you in a clockwise direction around the circle; a counter-clockwise rotation moves you in a counter-clockwise direction. Simply rotate the knob in the direction you want to move through screens.

When Accu-Drive is first turned on, a welcome screen is displayed for approximately three seconds followed by the first of a series of operational screens. The operational screens are used to set-up and manage production runs which are needed in the day-to-day usage of the applicator. The operational screens are:



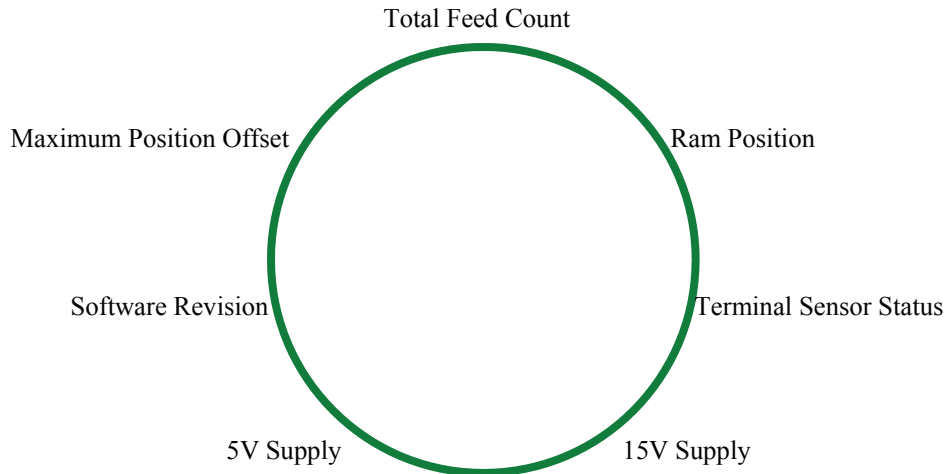
Additional information on the operational screens are provided in section 7.

## Section 5 Control Module—continued

Accu-Drive includes a series of configuration and troubleshooting screens. To access these screens, do the following:

- Turn Accu-Drive off
- Press and hold the knob
- While keeping the knob pressed, turn Accu-Drive on

These screens are shown below.

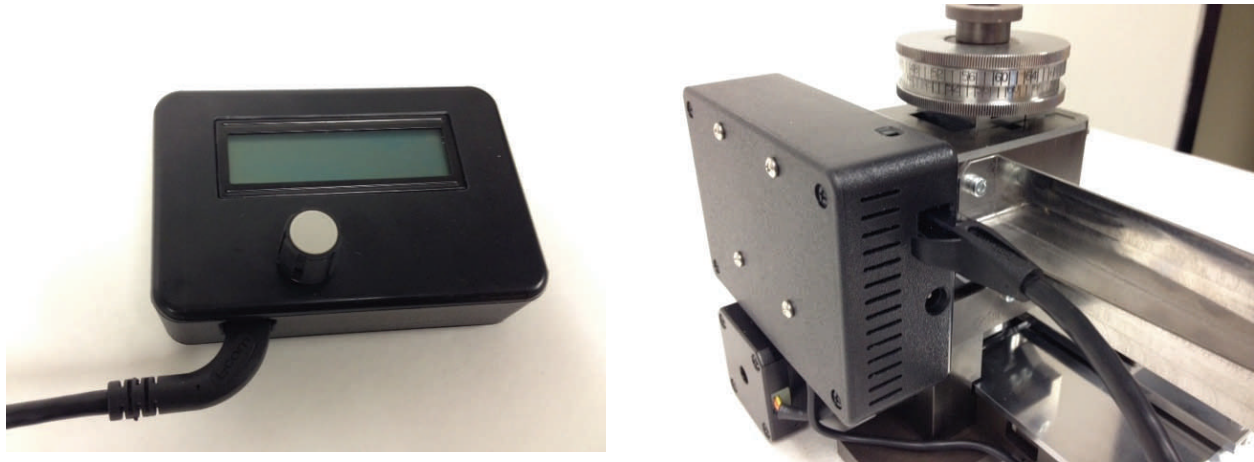


Additional information on the configuration/troubleshooting screens are provided in section 8.

## Section 5 Control Module—continued

The control module is tethered to the Accu-Drive applicator using Ethernet connectors and an Ethernet cable. (Please note that neither the control module nor the applicator support the Ethernet standard and neither connector is an Ethernet port. The control module/applicator interface supports data communications unique to this product. **DO NOT CONNECT THE APPLICATOR OR CONTROL MODULE TO AN ETHERNET PORT**).

To connect the control module to the Accu-Drive applicator, simply connect the “right angle” end of the supplied Ethernet cable to the connector on the bottom of the control module. Plug the straight end of the cable to the connector on the side of the electronics enclosure of the applicator.



Once the Accu-Drive applicator has been set-up for a production run, the control module can be disconnected and securely stowed to prevent unauthorized changes to the set-up. The applicator will be responsive to upward motions of the ram to trigger feeding cycles and will do so based upon the most recently entered set-up. The control module can be unconnected or re-connected to the applicator at any time, even if the applicator is powered-up.

The control module has a magnetic backing. Attach the module to any convenient magnetic surface that best facilitates access to the module.

Set-up information is stored in a non-volatile memory and is therefore retained when the Accu-Drive applicator is turned-off or loses power. The last set-up is restored each time Accu-Drive is turned on.

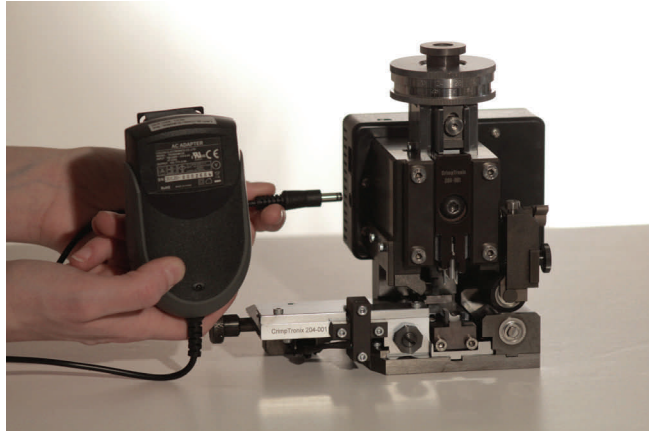
The sections to follow describe how to navigate the user interface menu structure, display information, modify set-up parameters and initiate actions to simplify set-up tasks.

## Section 6 Power Supply and Power Switch

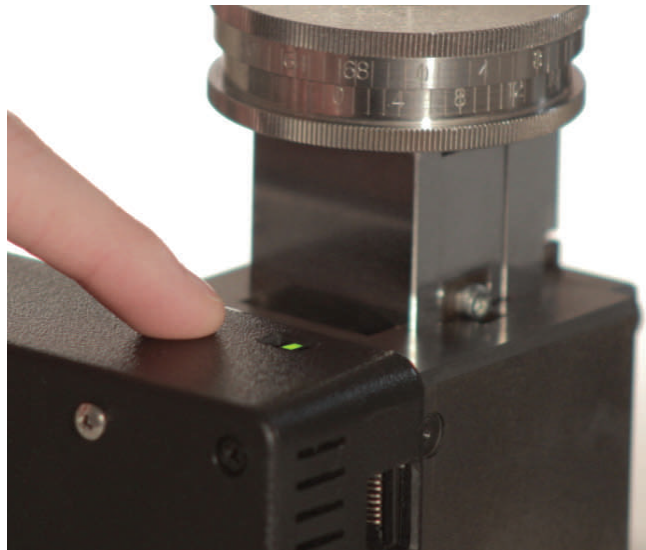
To connect electrical power to Accu-Drive and turn it on, do the following:

Plug the power supply into an AC outlet (120V, 60 hertz). Power consumption does not exceed 30 watts. A green led on the power supply is lit when AC power is present.

Plug the barrel connector on the power supply into the power input connector located on the side panel of the Accu-Drive electronics enclosure.



Turn Accu-Drive on using the power switch located on top of the electronics enclosure. The switch is illuminated when Accu-Drive is on.



At all times, follow safety precautions listed in section 2.

When Accu-Drive is turned on after being turned off or after a loss of AC power, it will restore all feeding parameters to the state that existed prior to being turned off or loss of power. If a feeding cycle is in progress when Accu-Drive is turned off (or it loses AC power), the feed cycle is terminated; it will not complete that feeding cycle when it is turned on again.

## Section 7 Operational Screens

Operational screens are accessible when Accu-Drive is turned-on normally (that is, when the control knob is *not* pressed when the applicator is being turned-on). Operational screens are used in the day-to-day usage of the applicator to set-up and monitor production runs. Section 7 provides details on the usage of the operational screens.

### Section 7.1 Welcome Screen

The welcome screen is the first screen displayed each time Accu-Drive is turned on. It is displayed for approximately three seconds and is followed by the home screen.

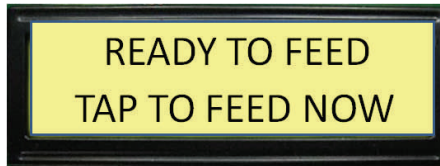


## Section 7.2 Home Screen (Ready to Feed)

The home screen (Ready to Feed) screen should be selected whenever you want to manually initiate a terminal feeding cycle, that is, when you want to feed the next terminal into position without having to move the ram. To initiate a feeding cycle manually, simply press the knob. A feeding cycle will begin immediately, even if a delay has been set (refer to section 7.5).

The home screen is accessed in three different ways:

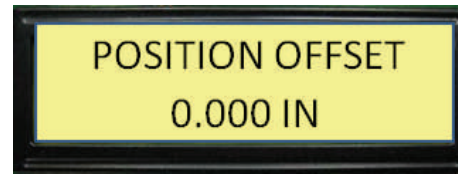
1. The home screen can be accessed through normal screen selection (rotating the knob).
2. At any time an upward motion of the ram is sensed, Accu-Drive will automatically revert to the home screen *and* initiate a feeding cycle. For this case, if a delay is set, feeding will not begin until the delay has expired. The screen will display the amount of delay time remaining until it has expired. The screen will display “feeding” while the feeding cycle is in progress.
3. The home screen can be accessed from any other screen by pressing the knob on the control module for more than one second.



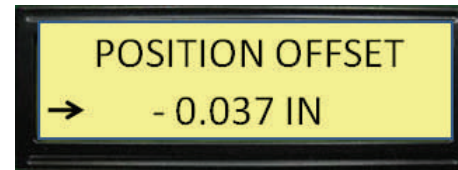
## Section 7.3 Position Offset

The Accu-Drive applicator and crimp packs are designed to feed terminals accurately. In most cases, no positioning adjustments are needed. However, if adjustments are needed, for example, to accommodate worn tooling, the control module can be used to make an adjustment in steps of .001". The adjustment range is user-selectable, up to a maximum of +/- .050". (Refer to section 8.3). To adjust position offset, do the following:

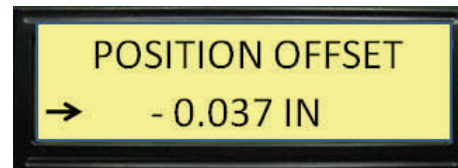
Scroll through menu selections to display the "Position Offset" screen. The current offset is displayed.



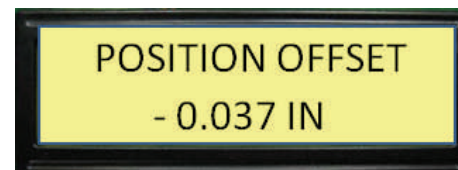
To change the offset, press the knob to access the second row of the screen. The arrow indicates that the second row is selected. Turn the knob clockwise to increase the setting. Turn it counterclockwise to decrease the setting.



After position offset has been changed, the next press of the knob initiates a feeding cycle. This allows the operator to make position changes and quickly check if the new position is acceptable.



Once a final position has been determined, the first press of the knob that occurs with no changes made will enter the new value. A feeding cycle is not initiated. Note that the arrow has disappeared. You can now use the knob to access other screens.

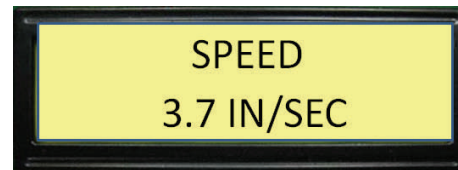




## Section 7.4 Speed

The speed at which terminals are advanced toward the anvil during a feeding cycle can be set using the control module. Speed settings range from 0.5 inch/second to 5.0 inches/second in steps of 0.1 inch/second. Because the terminal is carefully accelerated to the selected speed at the beginning of the feeding cycle and carefully decelerated as it approaches the anvil, terminal positioning is accurate and precise even at high feeding speeds. Feeding is graceful and smooth with few mis-feeds, particularly with mylar tape. And because terminal feeding is not mechanically linked to the ram, high press speeds can be used to maximize throughput without causing feeding problems. To display or change speed, do the following:

Scroll through menu selections to display the “Speed” screen. The current speed setting is displayed.



To change the speed setting, press the knob to access the second row of the screen. The arrow indicates that the second row is selected. Turn the knob clockwise to increase the setting. Turn it counterclockwise to decrease the setting.



Press the knob to enter the new setting. Note that the arrow has disappeared. You can now use the knob to access other screens.



## Section 7.5 Delay

In operation, the Accu-Drive applicator initiates a feed cycle by sensing the upward motion of the ram after a terminal has been crimped. In some cases, problems occur if a feeding cycle begins immediately after the upward motion of the ram is sensed; additional time may be needed by an operator or a machine to clear a just-crimped wire from the anvil. The delay setting is used to create a delay between the time the ram rises and the time feeding actually begins. The range of delay settings is from 0 to 5.0 seconds in steps of 0.1 second. To display or change delay, do the following:

Scroll through menu selections to display the “Delay” screen. The current delay setting is displayed.



To change the delay setting, press the knob to access the second row of the screen. The arrow indicates that the second row is selected. Turn the knob clockwise to increase the setting. Turn it counterclockwise to decrease the setting.



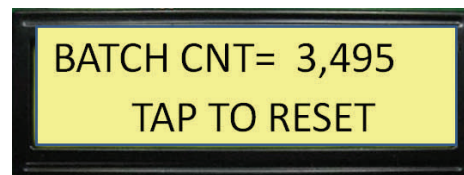
Press the knob to enter the new setting. Note that the arrow has disappeared. You can now use the knob to access other screens.



## Section 7.6 Batch Count

The Accu-Drive applicator provides a counter that can tally the number of feed cycles that occur. You can use the batch counter to keep track of completed product during a production run. This counter is resettable. It can count up to 99,999 feed cycles. To display or reset the batch count, do the following:

Scroll through menu selections to display the “Batch Count” screen. The current value of the counter is displayed. Simply press the knob to reset the count. Rotate the knob to access other screens.



## Section 7.7 Illumination

The Accu-Drive applicator brightly illuminates the crimping zone to facilitate terminal positioning and troubleshooting crimping problems. If desired, illumination can be turned off. To turn illumination on or off, do the following:

Scroll through menu selections to display the “Illumination” screen. The current setting of the led is displayed.



Press the knob to toggle the state of the led. Rotate the knob to access other screens.



## Section 8 Configuration/Troubleshooting Screens

Configuration/troubleshooting screens are accessible when Accu-Drive is turned-on while the knob on the control module is being pressed. (Turn Accu-Drive off, press and hold the control knob and, while keeping the knob pressed, turn Accu-Drive on). These screens are used occasionally to change configuration or troubleshoot problems.



## Section 8.1 Total Feed Count

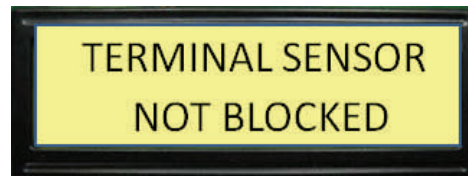
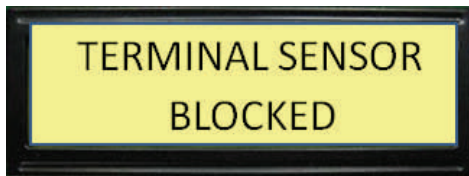
Accu-Drive maintains a count of the total number of feeding cycles. This counter is not resettable. You can use this counter to support a preventive maintenance program based on usage.



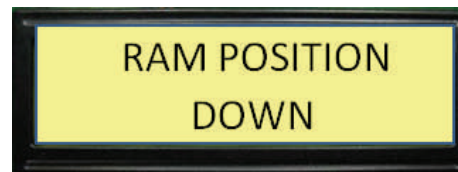
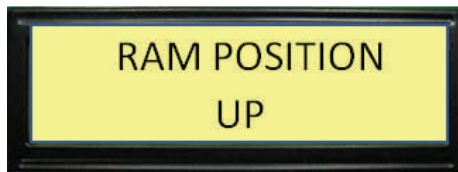
## Section 8.2 Diagnostic Screens

Five diagnostic screens are available to facilitate troubleshooting if needed. The screens are:

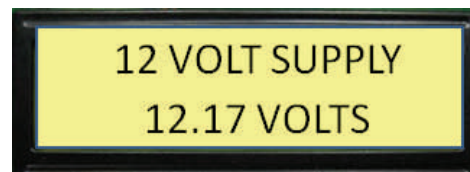
- **Terminal Sensor:** The terminal sensor is an optical sensor mounted on the lower tooling of the crimp pack. This screen indicates if the light beam in the optical sensor is blocked or not blocked. Use this screen to determine if the terminal sensor and interconnecting cables are functioning properly .



- **Ram Position:** This screen indicates if the ram is up or down. Use this screen to determine if the ram sensor and interconnecting cables are functioning properly.



- **Supply Voltages:** Accu-Drive operates from both a 5 volt supply and 12 volt supply. The status of each power supply can be displayed.



- **Software Revision:** A fifth screen (not illustrated) provides the software revision number of the software installed in the applicator.

## Section 8.3 Maximum Position Offset

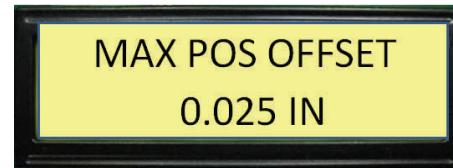
Section 7.3 describes how the control module can be used to change the position of the terminal over the anvil. The range of adjustment for position offset has a maximum value of  $\pm .050''$ . However, using the maximum position offset screen, this range can be modified to any value from 0 up to the maximum of  $.050''$ . For example, if the value set in maximum position offset screen is  $.019''$ , the position offset screen would limit the operator to a position offset range of  $\pm .019''$ . This feature is provided to prevent operators from selecting position offsets that are large enough to damage tooling.

A maximum position offset of 0 can be selected. This eliminates the ability to change position offset.

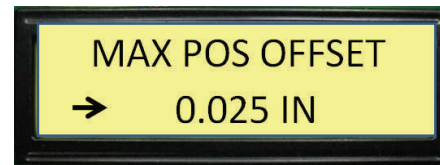
Note that whenever the maximum position offset is changed, the current position offset is reset to 0.

To adjust maximum position offset, do the following:

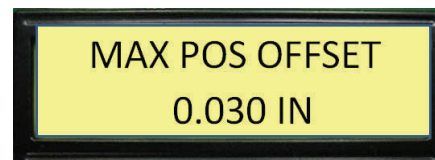
Scroll through menu selections to display the "Max Position Offset" screen. The current maximum position offset is displayed.



To change the maximum offset, press the knob to access the second row of the screen. The arrow indicates that the second row is selected. Turn the knob clockwise to increase the setting. Turn it counterclockwise to decrease the setting.



Press the knob to enter the new setting. Note that the arrow has disappeared. You can now use the knob to access other screens.

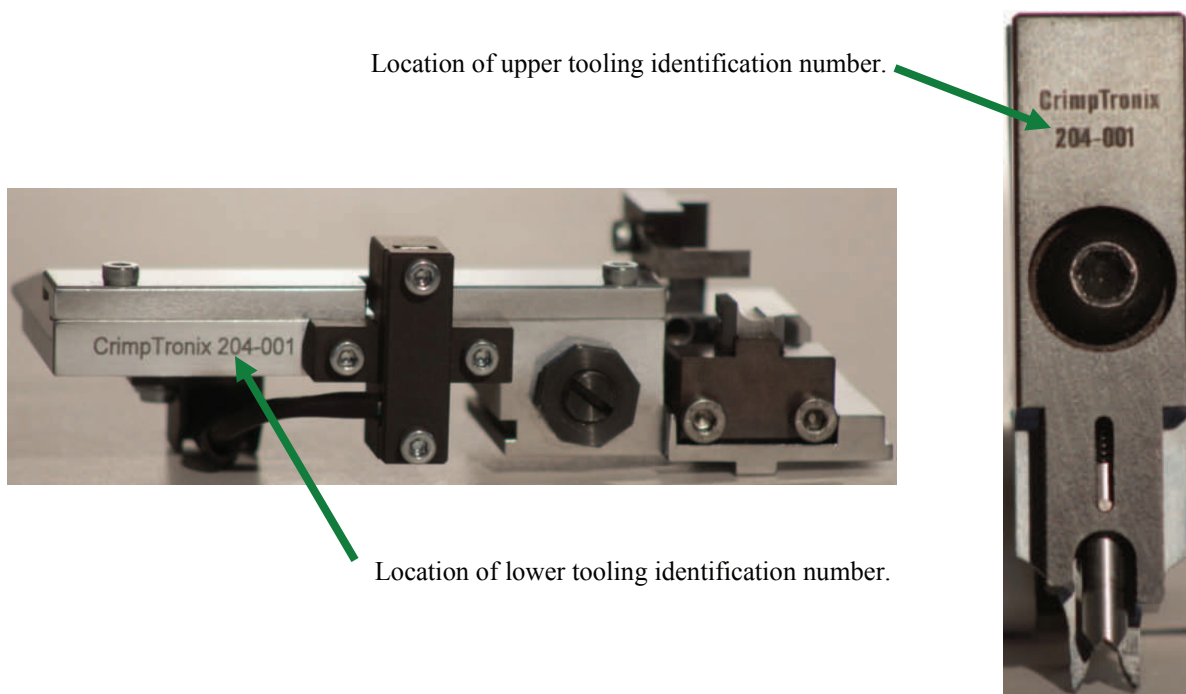




## Section 9 Crimp Pack Identification

Crimp packs consist of two separate tooling modules: upper tooling module and lower tooling module. When a crimp pack is installed in Accu-Drive, it is imperative that the lower tooling is the correct mate to the upper tooling. Otherwise, the tooling will very likely be damaged when Accu-Drive is put into operation. To verify that the upper and lower tooling are mates, compare the numbers as shown below and make certain that the numbers match! After installing the tooling, cycle the ram manually (or operate the press in slow mode) to verify that that the tools mate properly. If the press is cycled at full speed with mismatched tooling, the tooling will be damaged.

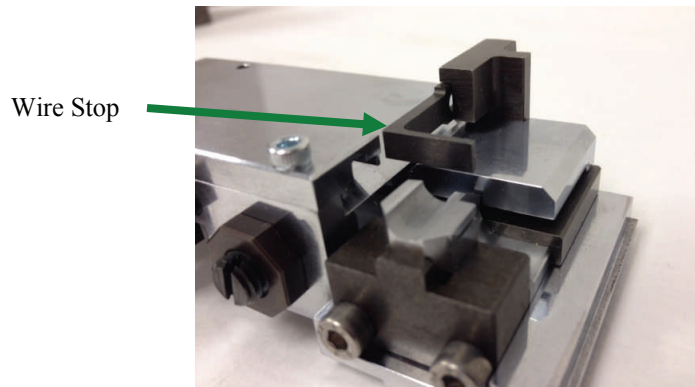
The pictures below show the location of the identification numbers for a representative sample of the upper and lower tooling. Tooling designs vary depending upon the specific terminal and may not appear exactly as pictured.



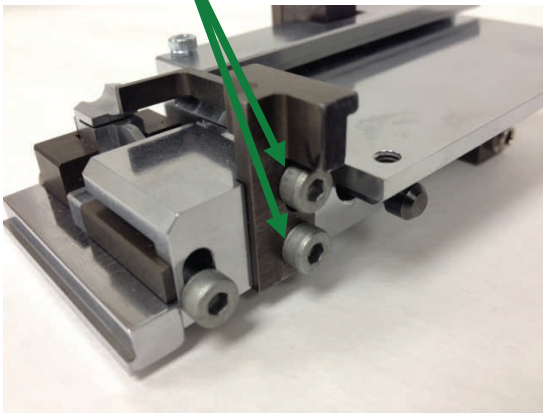
## Section 10 Wire Stop Adjustment

When Accu-Drive is used in a bench top press, the wire stop must be adjusted to assist the operator in placing the wire over the terminal to the correct depth. When used in fully automated wire processing equipment, the wire stop aids in the removal of the terminal from the upper tooling. One adjustment is available to position the height of the wire stop. A second adjustment is available to control the front-to-back position.

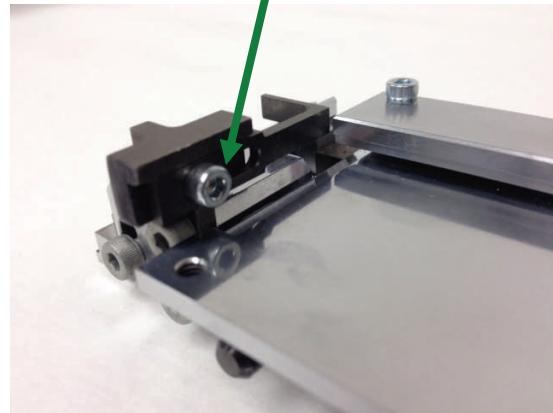
The pictures below show the location of the wire stop and how it is adjusted for a representative sample of lower tooling. Lower tooling designs vary depending upon the specific terminal and may not appear exactly as pictured.



Height Adjustment



Depth Adjustment

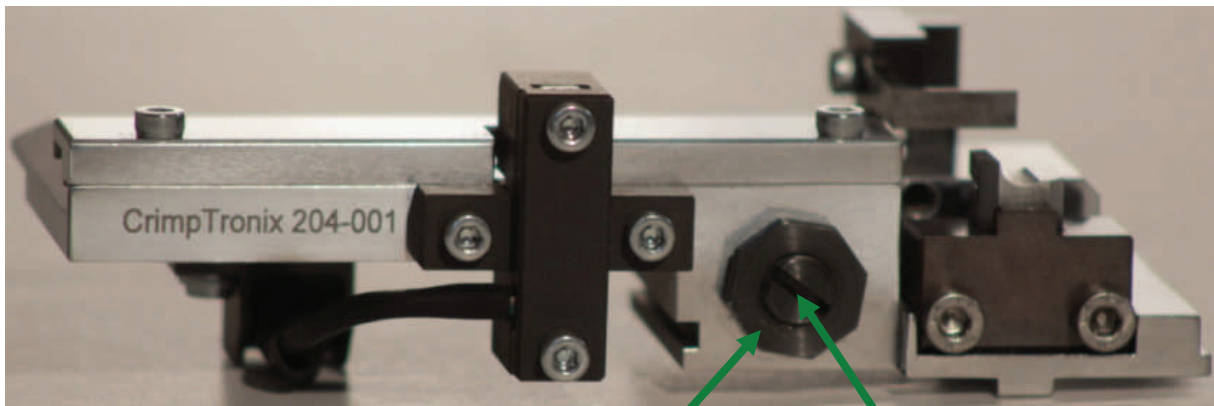


## Section 11 Bellmouth Adjustment

Bellmouth is adjusted at the factory. During normal usage, bellmouth should not have to be adjusted for the life of the crimp pack. If adjustment becomes necessary, use the procedure below.

The pictures below show a representative sample of lower tooling. These designs vary depending upon the specific terminal and may not appear exactly as pictured.

- With the lower tooling properly installed in Accu-Drive, loosen the bellmouth lock nut.
- Adjust the bellmouth adjustment screw clockwise to move the lower tooling toward you. This increases the bellmouth on the front of the terminal and diminishes it on the rear of the terminal.
- Adjust the bellmouth adjustment screw counter-clockwise to move the lower tooling away from you. This increases the bellmouth on the rear of the terminal and diminishes it on the front of the terminal.
- **WARNING: EXCESSIVE BELLMOUTH ADJUSTMENT CAN RESULT IN INTERFERENCES BETWEEN THE UPPER AND LOWER TOOLING. TO AVOID DAMAGING THE TOOLING, MOVE THE RAM MANUALLY AFTER EACH ADJUSTMENT TO VERIFY THAT NO INTERFERENCES EXIST.**
- Tighten the bellmouth lock nut.



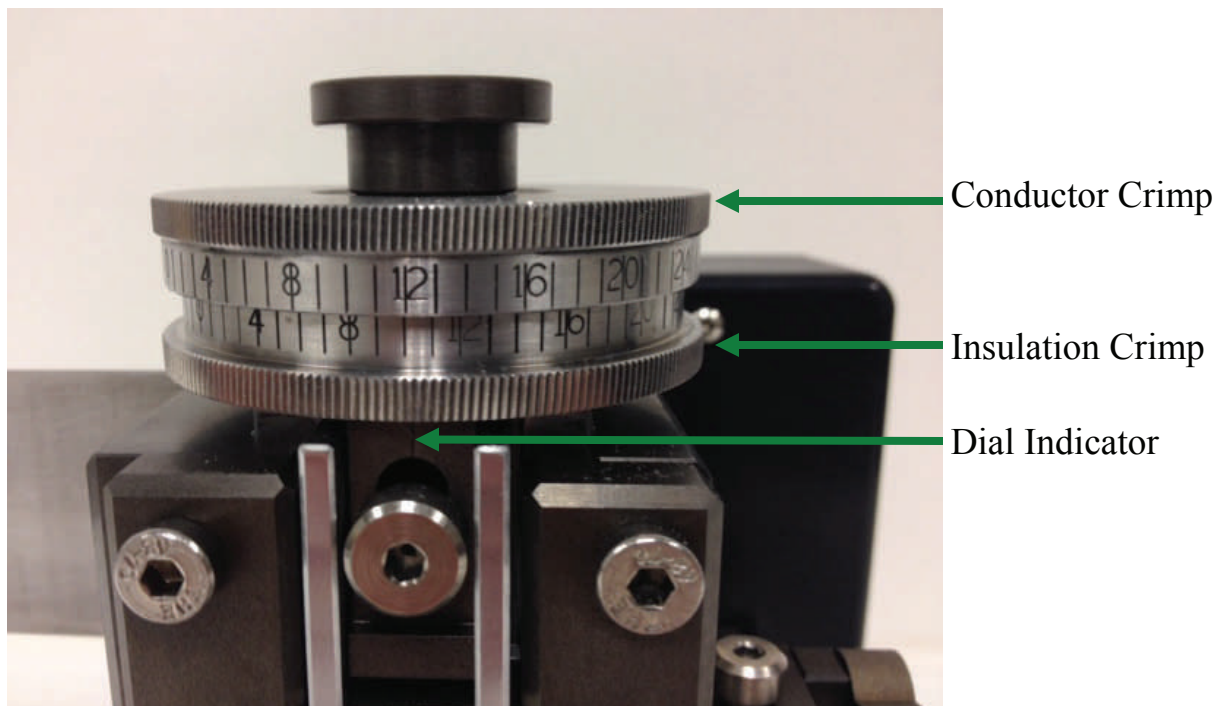
Bellmouth Lock Nut

Bellmouth Adjustment  
Screw

## Section 12 Crimp Height Adjustment

Accu-Drive is designed for use in a press having a shut height of 135.8 mm (5.35"). The conductor crimp height adjustment range is 1.0 mm (.039"). The insulation crimp height adjustment range is also 1.0 mm (.039"). For the conductor and insulation crimp, the resolution is .0127 mm (.0005"). To adjust crimp height, do the following:

- Refer to crimp specifications provided by the terminal manufacturer.
- Adjust the conductor dial and insulation dial to 0.
- Crimp a terminal and measure/inspect the conductor and insulation crimp. Increase the dial settings until acceptable crimps are obtained.
- Higher numerical settings equate to tighter crimps.



## Section 13 Remove a Crimp Pack

All of the tooling required to crimp a specific terminal is referred to as a “Crimp Pack”. It consists of two pieces:

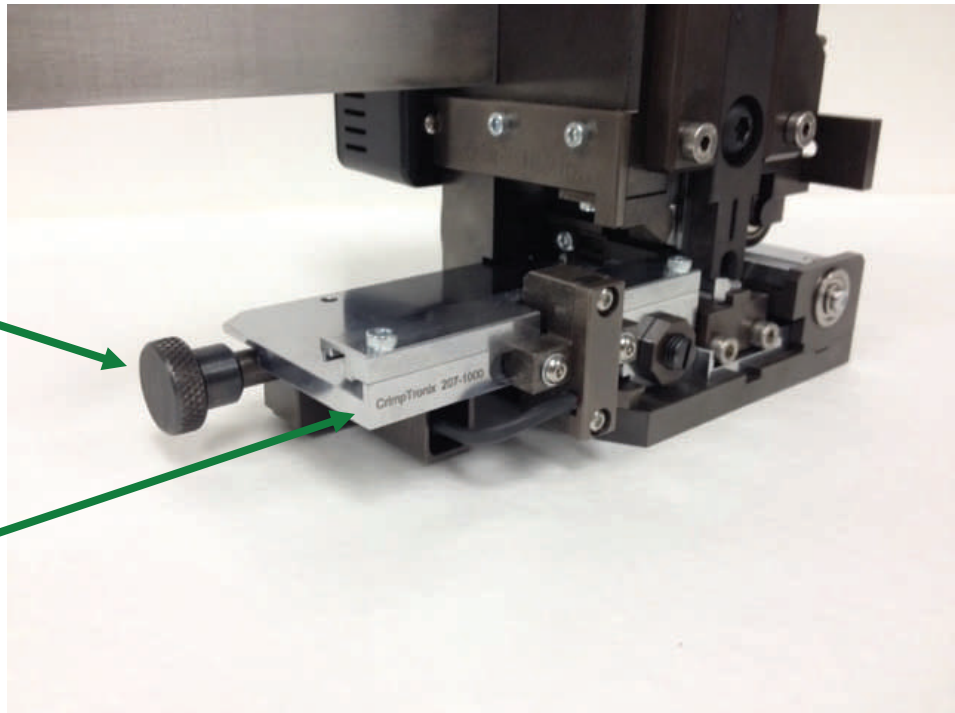
1. Lower tooling. This includes the terminal sensor, lower tooling, anvil and other tooling.
2. Upper tooling. This includes all tooling located in the ram. All of the pieces of the upper tooling are clipped together to form a single unit.

To remove a crimp pack from Accu-Drive, do the following:

- Pull back on the lower tooling release and rotate it (either clockwise or counter-clockwise) to latch it in position. Then, pull the lower tooling toward you to slide it out of Accu-Drive.

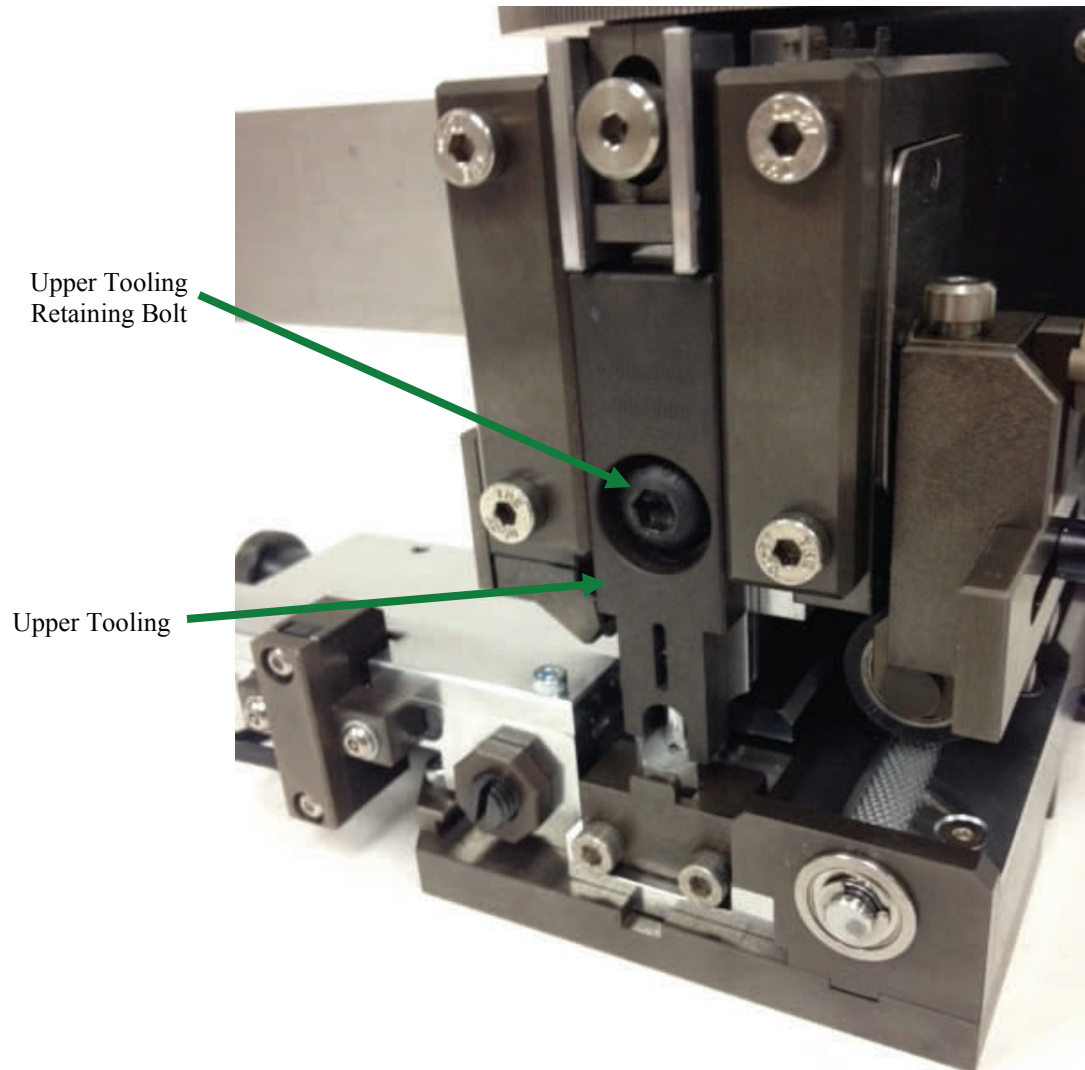
Release

Lower tooling Assembly



### Section 13 Remove a Crimp Pack– continued

- Remove the upper tooling retaining bolt followed by removal of the upper tooling.



## Section 14 Install a Crimp Pack

To install a crimp pack in Accu-Drive, follow the steps listed below. Refer to section 13 for pictures of all items referenced.

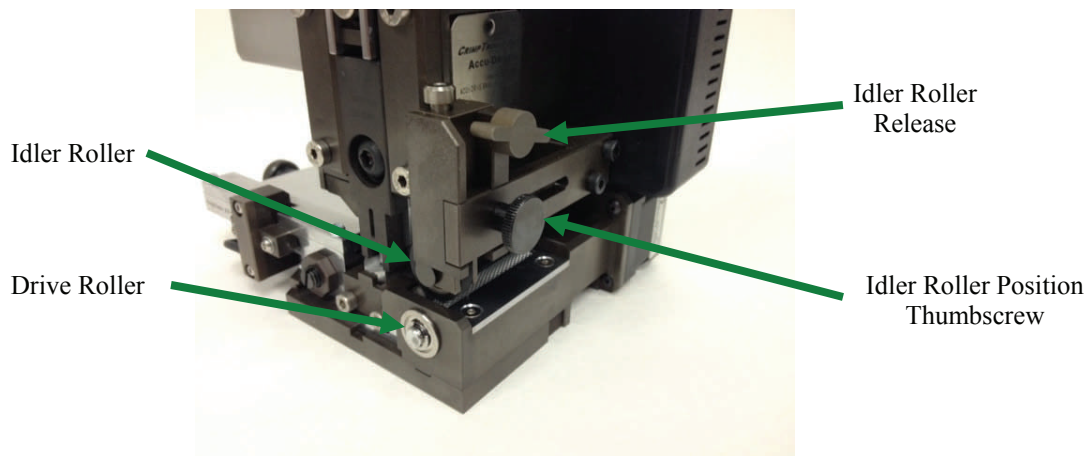
- Verify that that the lower and upper tooling to be installed are the correct mates to each other. Section 9 describes how this is determined.
- If a crimp pack is currently installed in Accu-Drive, remove it. Refer to section 13.
- Locate the upper tooling in the ram and secure it in place by installing and tightening the retaining bolt.
- If the lower tooling release is not already in the “release” position, pull back on the release and rotate it (either clockwise or counter-clockwise) to latch it in position. Then slide the lower tooling into place into Accu-Drive. Rotate the release again (either clockwise or counterclockwise) to secure the assembly in place. **MAKE CERTAIN THAT THE LOWER TOOLING IS FULLY INSERTED AND THAT THE RELEASE IS FULLY SEATED TO SECURE THE LOWER TOOLING IN PLACE.**
- **IMPORTANT:** Manually slide the ram up and down to verify that tooling meshes correctly. Or, if installed in a press, manually cycle the press or run the press in slow mode. If any interferences are observed, then do the following:
  - Verify that the lower tooling is the correct mate to the upper tooling.
  - Verify that the upper and lower tooling are installed correctly.
  - Make certain that the release has the lower tooling properly secured.
  - To avoid damage to the tooling, do not operate Accu-Drive until matching tooling is installed correctly.



## Section 15 Install Terminals

The specific steps to install terminals into the stock guide of the lower tooling depends upon the design of the lower tooling which in turn depends upon the terminal. For example, un-insulated open barrel terminals must be aligned with a rail that typically fits between the insulation and crimp portions of the terminal. For mylar tape, the slots in the tape must be secured in a hold-down mechanism. A generic procedure is provided below. Contact CrimpTronix if you have questions about loading terminals in the lower tooling.

- Raise or remove the ram.
- Rotate the idler roller release to raise the idler roller above the drive roller.
- Slide the terminals/carrier strip into the left side of the lower tooling assembly, across the anvil, drive roller and idler roller. Secure the terminals/carrier strip in accordance with the specific design of the crimp pack.
- Loosen the idler roller position thumbscrew.
- Slide the idler roller to position it above the carrier strip such that it has no interference with terminals that may pass-through without getting terminated.
- Tighten the idler roller thumbscrew to secure the idler roller in position.
- Rotate the idler roller release to lower the idler roller against the carrier strip.
- If the ram had been removed, re-install the ram.





## Section 16 Remove Terminals

To remove terminals from Accu-Drive, do the following: Pictures of the items referenced below can be found in section 15.

- Raise or remove the ram.
- Rotate the idler roller release to raise the idler roller above the drive roller.
- Release any hold-down mechanism, if applicable.
- Slide the terminals/carrier strip out of the lower tooling assembly.

## Section 17 Set Up Accu-Drive to Run a New Terminal

This section describes how to set up Accu-Drive to run a new terminal. **FOLLOW ALL SAFETY PRECAUTIONS OUTLINED IN SECTION 2. BE CERTAIN TO HEED THE FOLLOWING:**

- |         |  |
|---------|--|
| NEVER   | USE THE CRIMPTRONIX ACCU-DRIVE APPLICATOR IN A PRESS OR WIRE PROCESSING MACHINE WITHOUT GUARDS OR SAFETY DEVICES THAT ARE INTENDED TO PREVENT HANDS FROM REMAINING IN THE DIE SPACE. THIS APPLICATOR IS SUPPLIED WITH NO GUARDS AND IS INTENDED TO BE USED WITH THE GUARDS SUPPLIED BY THE PRESS AND/OR THE WIRE PROCESSING MANUFACTURER.  |
| NEVER   | OPERATE, SERVICE, INSTALL, OR ADJUST THIS ACCU-DRIVE APPLICATOR WITHOUT PROPER INSTRUCTION AND WITHOUT FIRST READING AND UNDERSTANDING THE INSTRUCTIONS IN THIS MANUAL AND ALL APPLICABLE PRESS AND/OR WIRE PROCESSING MACHINE MANUALS.  |
| NEVER   | INSTALL OR SERVICE THIS ACCU-DRIVE APPLICATOR WHILE CONNECTED TO ANY ELECTRICAL POWER SOURCE. DISCONNECT POWER BY UNPLUGGING ACCU-DRIVE FROM ITS POWER SOURCE.   |
| CAUTION | CRIMPTRONIX ACCU-DRIVE APPLICATORS ARE DESIGNED TO OPERATE IN PRESSES WITH STANDARD SHUT HEIGHTS OF 135.80MM (5.346”). INSTALLATION IN CRIMP PRESSES WITH OTHER THAN STANDARD SHUT HEIGHTS CAN CAUSE SEVERE TOOL BREAKAGE. IT IS RECOMMENDED THAT SHUT HEIGHT BE VERIFIED BEFORE INSTALLING ACCU-DRIVE IN A PRESS.<br><br>CRIMPTRONIX WILL NOT BE LIABLE FOR ANY DAMAGES AS A RESULT OF INSTALLATION IN A CRIMP PRESS WITH NONSTANDARD OR IMPROPERLY SET SHUT HEIGHT |

In the steps below, it is assumed that the Accu-Drive applicator is installed in a press and has a crimp pack and terminal already installed. The crimp pack/terminal already installed is referred to as the “old” crimp pack and terminal. The crimp pack/terminal to be installed is referred to as the “new” crimp pack and terminal. For some steps, sections are referenced which provide additional information about that step.

- Using the Ethernet cable supplied, connect the control module to Accu-Drive if not already connected.
- Remove the old terminal (refer to Section 16).
- Remove the old crimp pack (refer to Section 13).
- Install the new crimp pack (refer to Section 14).
- Install the new terminal (refer to Section 15).

## Section 17 Set Up Accu-Drive to Run a New Terminal– continued

- Verify that the lower tooling assembly is the correct mate to the upper tooling installed in the ram. Verify that the crimp pack was installed correctly. (Refer to sections 9 and 14).
- Apply power to Accu-Drive and turn Accu-Drive on. (Refer to Section 6).
- Set the conductor crimp and insulation crimp dials on the ram to 0.
- If necessary, use the control module to select the DELAY screen and set the delay to an appropriate value (Refer to section 7.5).
- If necessary, use the control module to select the SPEED screen and set the speed to an appropriate value (Refer to section 7.4).
- Use the control module to select the HOME screen (Ready to Feed). Manually initiate a feed cycle to place a terminal over the anvil. Depending on how terminals were installed, it may be necessary to initiate more than one feed cycle.
- Observe the left-to-right position of the terminal over the anvil. Modify the position of the terminal if necessary using the control module. (Refer to section 7.3).
- Turn the press on. Crimp a terminal to a properly prepared wire. If possible, operate the press manually or run the press in slow mode to avoid tooling damage. Inspect the crimp. Make adjustments to crimp heights, feed position or bellmouth as may be necessary.
- If Accu-Drive is being used in a bench top press, make adjustments to the wire stop if necessary. See section 10.
- Start production.

## Section 18 Maintenance

To provide optimum performance and minimum down time, it is recommended that Accu-Drive and crimp packs be cleaned, inspected and lubricated every 8 hours of operation. The recommended lubricants are NLGI #2 Grade Lithium Complex EP grease or equivalent. **DO NOT USE SOLVENTS TO CLEAN ACCU-DRIVE OR CRIMP PACKS. DO NOT IMMERSE ACCU-DRIVE OR CRIMP PACKS IN SOLVENTS OR CLEANING AGENTS.**

### Cleaning Accu-Drive

- Remove the ram. Do not remove the crimp dial from the ram.
- Remove the crimp pack.
- Using clean cloth, remove grease and any other debris from the ram and assembly.
- Lubricate per the instructions below.

### Accu-Drive Lubrication

- With ram removed, apply light coating of grease to each corner of the ram.
- Apply a light coating of grease to each corner of the ram guide.
- Re-insert ram; remove any excess grease or oil.

### Crimp Pack Cleaning and Inspection

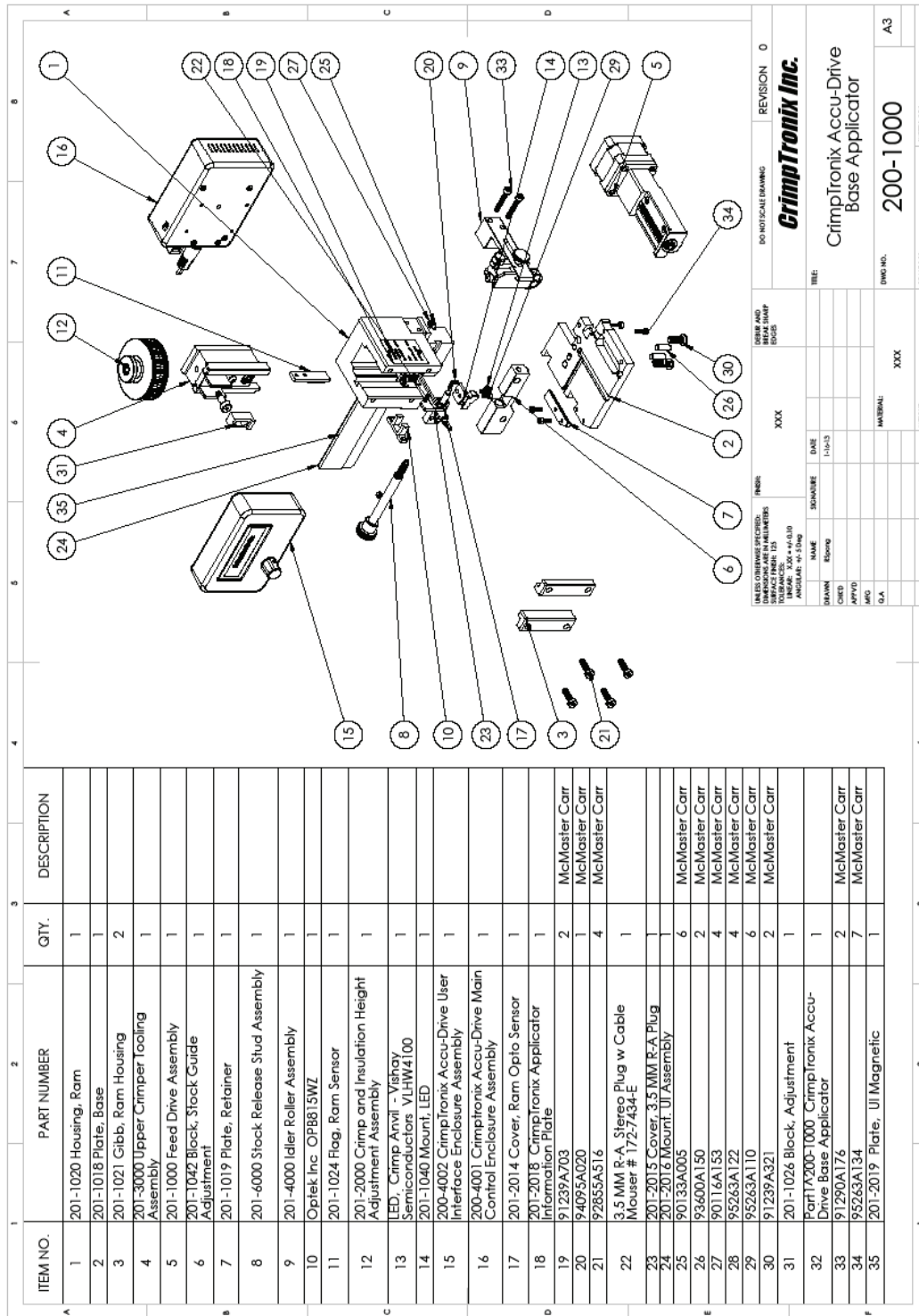
- Remove the crimp pack from Accu-Drive.
- Using clean cloth, remove grease, oil and any other debris from the crimp pack.
- Inspect the lower and upper tooling assemblies with special attention to items that “touch” the terminal, such as the tooling punch, anvil, die sections, cutter and cutter retainer. Replace any worn or damaged parts.
- Nothing on the crimp pack requires lubrication.

## Section 19 Specifications

Applicator Type	Left-to-right side feed applicator. Stand-alone operation (no need for host controller).
Compatibility (with presses)	Fits in most industry-standard presses with shut height of 135.8 mm (5.35").  Compatible with 41.28 mm (1.625") stroke and 28.58 mm (1.125") stroke.  Modifications to guards may be necessary. Custom clamps (available from CrimpTronix) may be necessary.
Tooling	Quick change crimp pack.
Terminal Feed Mechanism	Electronic/stepper motor.
Delay	0 to 5 seconds in 0.1 second increments..
Speed	0.5 in/sec to 5.0 in/sec in steps of 0.1 in/sec.
Position Offset	-.050" to +.050" in .001" steps.
Crimp Heights (Conductor and Insulation)	
Range	1.0 mm (.039")
Resolution	.0127 mm (.0005")
Power Requirements	90V to 240V AC, 50-60 Hz., single phase, 30 watts.
Dimensions	Length: 222.5 mm (8.76") Height: 146.4 mm (5.76") Depth: 125.7 mm (4.95")
Mass	4.88 kg (10.75 pounds)
Environmental	40 to 104 degrees Fahrenheit. 10% to 90% relative humidity, non-condensing .

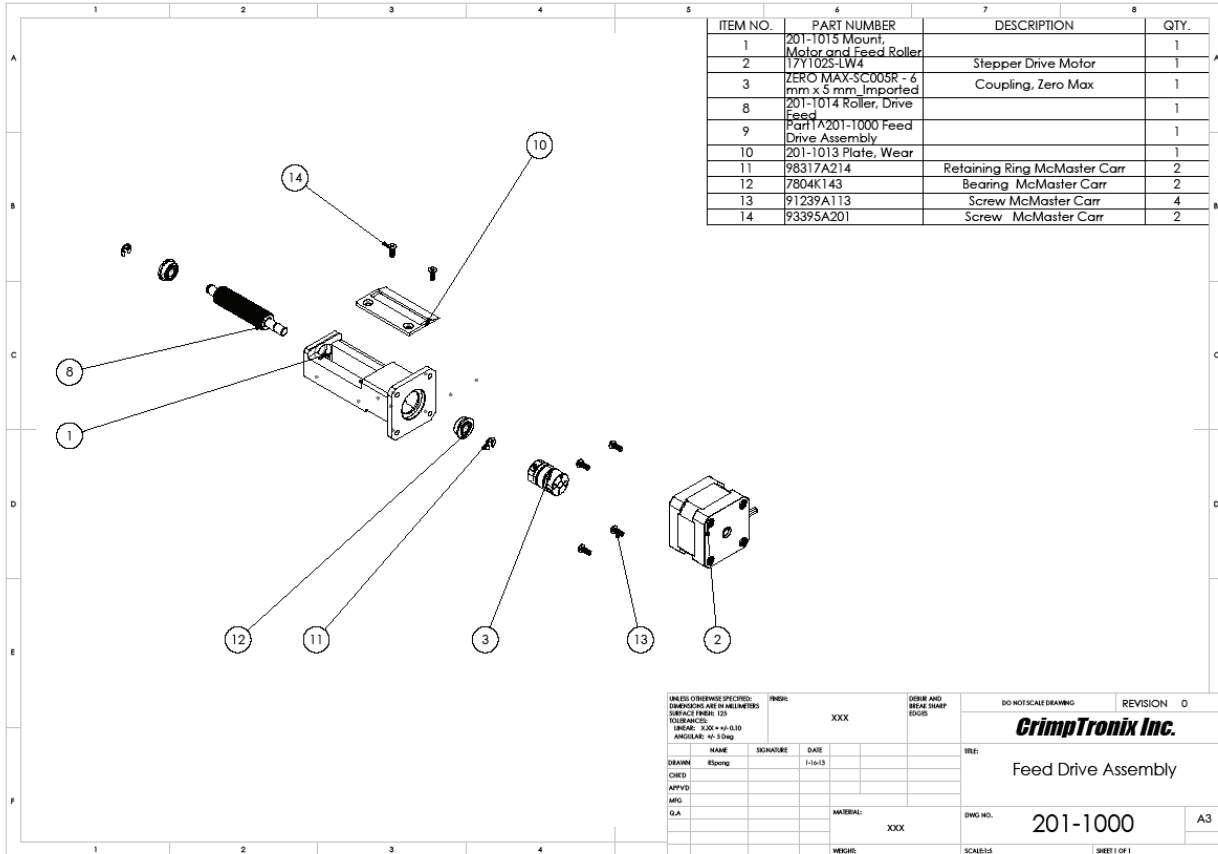
## Appendix A Bill of Materials– Accu-Drive Base Applicator

ITEM NO.	PART NUMBER	QTY.	DESCRIPTION
1	201-1020 Housing, Ram	1	
2	201-1018 Plate, Base	1	
3	201-1021 Gibb, Ram Housing	2	
4	201-3000 Upper Crimper Tooling Assembly	1	
5	201-1000 Feed Drive Assembly	1	
6	201-1042 Block, Stock Guide Adjustment	1	
7	201-1019 Plate, Retainer	1	
8	201-6000 Stock Release Stud Assembly	1	
9	201-4000 Idle Roller Assembly	1	
10	Optek Inc. OP8815WZ	1	
11	201-1024 Flag, Ram Sensor	1	
12	201-2000 Crimp and Insulation Height Adjustment Assembly	1	
13	LED, Crimp Anvil - Vishay Semiconductors VLHW4100	1	
14	201-1040 Mount, LED	1	
15	200-4002 CrimpTronix Accu-Drive User Interface Enclosure Assembly	1	
16	200-4001 CrimpTronix Accu-Drive Main Control Enclosure Assembly	1	
17	201-2014 Cover, Ram Opto Sensor	1	
18	201-2018 CrimpTronix Applicator Information Plate	1	
19	91239A703	2	McMaster Carr
20	9409SA020	1	McMaster Carr
21	92855A516	4	McMaster Carr
22	3.5 MM R.A. Stereo Plug w Cable Mouser # 1727434-E	1	
23	201-2015 Cover, 3.5 MM R.A Plug	1	
24	201-2016 Mount, UI Assembly	1	
25	90133A005	6	McMaster Carr
26	93400A150	2	McMaster Carr
27	90116A153	4	McMaster Carr
28	95263A122	4	McMaster Carr
29	95263A110	6	McMaster Carr
30	91239A321	2	McMaster Carr
31	201-1026 Block, Adjustment	1	
32	Part X200-1000 CrimpTronix Accu-Drive Base Applicator	1	
33	91290A176	2	McMaster Carr
34	95263A134	7	McMaster Carr
35	201-2019 Plate, UI Magnetic	1	

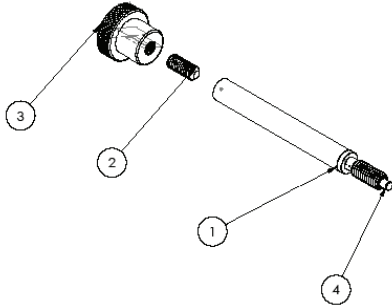


DO NOT SCALE DRAWING		REVISION	0
CrimpTronix Inc.			
TITLE		CrimpTronix Accu-Drive Base Applicator	
DATE		11-11-13	
DRAWN		Room	
CHECKED			
APPROVED			
BY		D.A.	
MATERIAL		XXX	
DWM NO.		200-1000	
SHEET NO.		A3	

## Appendix B Bill of Materials– Feed Drive Assembly



## Appendix C Bill of Materials– Stock Release Stud Assembly

				ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
				1	201-1025 Stud, Stock Assembly Release		1
				2	91390A122	Screw, Set McMaster Carr	1
				3	60765K312	Knob McMaster Carr	1
				4	CarrLane-M6HRPT-\$PARTNUMBER_4-hrpt-head		1

<small>UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: 125 TOLERANCES: LINEAR: .30X +.0/-0.10 ANGULAR: M 3.0deg</small>				NAME	SIGNATURE	DATE	1-16-13	DESIGN AND BENCH DRAFT EDDS	DO NOT SCALE DRAWING	REVISION	0
DESIGNED	Elspeng										
CHECKED											
APPROVED											
MFG											
Q.A.											
				MATERIAL: See Table				DWG NO. 201-1002			
				WEIGHT:				SCALE: 1:1			
								SHEET 1 OF 1			



## Appendix D Bill of Materials– Crimp and Insulation Height Adjustment Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	201-2001 Clevis Mount, Crimper - Insulation Height Adjustment		1
2	201-2002 Ring, Crimp Height Adjustment		1
3	201-2012 Nut, Crimp Height Adjustment Left Hand Thd		1
4	201-2009 Follower, Crimp and Insulation Height Adjustment		2
5	201-2003 Disc, Crimp and Insulation Height Adjustment		2
6	201-2006 Ring, Insulation Height Adjustment		1
7	201-2005 Spacer, Disc		1
8	201-2004 Nut, Insulation Height Adjustment Right Hand Thd		1
9	201-2008 Retainer, Spring Locators		1
10	201-2010 Pin Dowel		2
11	201-2011 Latch, Index		2
12	Spring, Compression, Index Latches - Lee-Spring-LC-014A-01M	Compression Spring Lee Spring	2
13	95263A576	McMaster Carr Screw	1

UNLESS OTHERWISE SPECIFIED:  
DIMENSIONS ARE IN INCHES  
SURFACE FINISH: 125  
TOLERANCES:  
LINEAR: .005 +0/-0.010  
ANGULAR: +/- .5deg

FINISH

XXXX

DESIGN AND  
DETAIL DRAWING  
EDGES

DO NOT SCALE DRAWING

REVISION 0

**CrimpTronix Inc.**

Crimp and Insulation Height  
Adjustment Assembly

NAME	SIGNATURE	DATE
DESIGN	Edgong	1-16-13
CHIEF		
APP'D		
MFG		
Q.A.		

MATERIAL:  
XXXX

DWG NO.

201.2000

A3

SCALE: 1:1

SHEET 1 OF 1

## Appendix E Bill of Materials– Idler Roller Assembly

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	201-1012 Slide, Idler Roller		1
2	201-1011 Retainer, Idler Roller Slide		1
3	LeeSpring-LC-059E-02M		1
4	201-1008 Plate, Slide		1
5	201-1009 Pin Idler Pivot		1
6	92581A250		1
7	90278A376	McMaster Carr Shoulder Screw	1
8	201-1010 Knob, Cam Lift Pin Modified		1
9	98317A214	McMaster Carr Retaining Ring	2
10	Idler Roller Misumi UM885-20		1

Note: The idler roller (part UM885-20) is designated as perishable tooling and is therefore not covered by the CrimpTronix warranty.

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: 125 TOLERANCES: LINEAR: 3.00 ± 0.50 ANGULAR: ± 5deg		FINISH: XXX	DRINK AND BEER DRINK EDGES	DO NOT SCALE DRAWING	REVISION: 0
NAME: Elong DESIGNED: Elong CHECKED: APPROVED: MFG: G.A.			DATE: 1-10-13	<b>CrimpTronix Inc.</b> Title: Idler Roller Assembly DWG NO. 201-4000 SCALE: 1:1 SHEET 1 OF 1	

## Appendix F Accessories

# ACCESSORIES

To install or operate the Accu-Drive applicator in selected presses, some modifications to the press may be necessary. CrimpTronix offers the following accessories to facilitate these modifications.

Item	Description	Part Number	Used On	Recommended
1	Komax Press Applicator Clamp	201-5001	Komax MCI 711/712 Press	CrimpTronix
2	Screw, Reduced Head Dia. 5MM Soc Hd Cap	FSBB5 10	Komax MCI 711/712 Press	Misumi
3	TYCO Press Applicator Clamp	201-5002	TE K Press	CrimpTronix

## Appendix G Warranty

# WARRANTY

## CRIMPTRONIX, INC.

CrimpTronix Inc. warrants that products delivered shall be free of defects in material, workmanship and fabrication for a period of ninety (90) days from the date of delivery. Defective material covered by this warranty will be repaired, refurbished or replaced at the sole discretion of CrimpTronix. The cost of shipping suspect material to CrimpTronix shall be borne by the customer. The cost of shipping repaired, refurbished or replaced material to the customer shall be borne by CrimpTronix.

### Exclusions

Components designated by CrimpTronix as “perishable tooling” are not covered by this warranty.

This warranty is not transferrable.

This warranty does not cover defects resulting from

- Improper use
- Improper handling
- Improper adjustments
- Use of electrical power sources outside of specified voltage or frequency ranges
- Use of electrical power supplies that were not provided by CrimpTronix
- Use of improper lubricants
- Lack of timely and proper preventive maintenance
- Electrical power surges
- Use in presses that do not have the industry standard shut height of 135.8mm (5.346”)

No other warranties are expressed or implied, including any implied warranties of merchantability or fitness for a particular purpose. CrimpTronix is not liable under any circumstances for any direct or consequential damages, howsoever incurred, even if notified of the possibility of such damages.

## Appendix H Contact Information

# CONTACT INFORMATION

**CrimpTronix**  
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Phone: 919-570-9303  
Email: [sales@crimptronix.com](mailto:sales@crimptronix.com)

Web  
CrimpTronix.com

## Notes